

METHOD AND APPARATUS FOR MEASURING CHARACTERISTICS OF GEOLOGICAL FORMATIONS

Abstract

An electromagnetic tomography system for determining properties of geological formation penetrated by at least one borehole lined with a conductive tubular includes a transmitter disposed in a first borehole and adapted to induce a magnetic field, a first receiver disposed in the first borehole and adapted to detect a magnetic field induced in the conductive tubular by the transmitter, and a second receiver adapted to detect a magnetic field induced in the geological formation by the transmitter. A method for determining a conductive tubular correction constant includes generating a magnetic field inside a representative piece of the conductive tubular, determining a first magnetic field amplitude inside the representative piece of the conductive tubular at a location proximate to a position of the generating a magnetic field, determining a second magnetic field amplitude outside the representative piece of the conductive tubular, and deriving the conductive tubular correction constant from a ratio of the first magnetic field amplitude and the second magnetic field amplitude.